

REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

I. CLAIM STATUS AND AMENDMENTS

Claims 25-44 were pending in this application when last examined and stand rejected.

Claim 25 is amended in a non-narrowing manner to "comprising" format and to recite active method steps to better conform to US practice for method claims. Support can be found in the claim as filed.

Claims 27-32 and 34 are amended in a non-narrowing manner to provide proper antecedent basis for term "ligand". Support can be found in the claims as filed.

Claims 31, 38 and 44 are amended to proper Markush style format. Support can be found in the claims as filed.

New independent claim 50 has been added which corresponds to claim 25, but further specifies the temperature range of the reaction as described in the specification at page 3, paragraphs [0034]-[0035].

Claims 25-44 and 50 are pending upon entry of this amendment.

Applicants have amended the specification to include appropriate sections and a "Brief Description of the Drawings." Support for the description of the figures is shown below.

Figure 1	page 16, lines 16-25
Figure 2	page 16, lines 25-27
Figures 3-5	page 17, lines 3-4
Figures 6-7	page 17, lines 16-17
Figures 8-9	page 18, lines 1-4
Figure 10	page 18, lines 12-13
Figure 11	page 18, line 25
Figure 12	page 19, lines 1-4
Figure 13	page 19, lines 13-14
Figure 14	page 19, lines 24-25
Figure 15	page 20, lines 1-2
Figure 16	page 20, lines 10-14
Figures 17a-b	page 21, lines 10-17
Figure 18	page 21, line 30

Thus, no new matter has been added by the above amendments to the specification.

Applicants are submitting the present Amendment without prejudice to the subsequent prosecution of claims to some or all of the subject matter which might be disclaimed by virtue of this response (although none is believed to be), and explicitly reserve the right to pursue some or all of such subject matter, in Divisional or Continuation Applications.

Applicants thank the Examiner for the careful examination of this case and respectfully request reexamination and reconsideration of the case, as amended. Below Applicants address the rejections in the Office Action and explain why the rejections are not applicable to the pending claims as amended.

III. FOREIGN PRIORITY

In item 2 on page 2 of the Office Action, the foreign priority claim to French application no. 03/04285 (filed April 7, 2003) was denied on the basis that the USPTO did not receive a certified English translation of French application no. 03/04285. The Office indicated that Applicants are only entitled to the filing date of October 6, 2005, i.e., the filing date of the instant application.

In reply, enclosed herewith is a verified English translation of French application no. 03/04285. As acknowledged by the Office, a certified copy thereof in French is already of record at the USPTO. Thus, it is believed that the requirements to establish foreign priority have been met, and as such, Applicants are entitled to priority to French application no. 03/04285, filed April 7, 2003. Kindly acknowledge such in the next Office Action.

III. OBJECTIONS TO THE SPECIFICATION

The specification was objected for being in improper format for not containing appropriate section headings and for lacking a brief description of the drawings for Figs. 1-18 for the reasons in items 5-6 on page 3 of the Action.

The present amendment overcomes these concerns by amending the specification, where appropriate, to include section

headings and to include a Brief Description for Figs. 1-18. Thus, withdrawal of the objections is solicited.

III. CLAIM OBJECTIONS

Claims 31, 38 and 44 were objected to for containing using improper Markush style language for the reasons in item 7 on page 4 of the Office Action. The present amendment overcomes this concern by amending the claims to proper Markush style format.

Claim 32 was objected as allegedly being an improper dependent claim for failing to further limit the subject matter of a previous claim. Applicants respectfully traverse this position.

Claim 32 depends on claim 26. Claim 26 recites "said solvent medium comprises at least one compound, called a ligand, selected from the group consisting of the bases and the acids." Accordingly, claim 26 reads on a ligand which is either a base or an acid. Claim 32 further limits claim 26 by specifying both an acid and a base are chosen as ligands. Thus, it is believed that claim 32 is a proper dependent claim, and thus, the objection should be withdrawn.

IV. PRIOR ART REJECTIONS

102(b) /103(a) rejection over O'BRIEN and/or MURRAY

Claims 25-40 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over either O'BRIEN et al. (US 2007/0140951A) or MURRAY et al. (US 6,262,129) for the reasons in item 11 on pages 5-6 of the Office Action.

This rejection is respectfully traversed.

To start, it is again noted that Applicants are entitled to priority to French application no. 03/04285, filed April 7, 2003.

O'BRIEN has a later priority date (i.e., December 11, 2003) than Applicants' April 7, 2003 priority date. As such, O'BRIEN cannot be used as prior art.

As to MURRAY, this patent fails to disclose or suggest each and every element of independent claim 25.

It is well established that to anticipate a claim, a cited prior art reference must disclose or suggest each and every element of the claimed invention. See, M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2131.

It is well established that to support a *prima facie* case of obviousness, the Office must provide a rationale showing that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their

respective functions to yield predictable results. See, *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 U.S.P.Q.2d 1385, 1395 (2007); and M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2143.02.

MURRAY describes a method for the preparation of metal nanocrystals (Col. 17, claim 1), wherein:

- a metal precursor solution is formed and said metal precursor solution is introduced to a surfactant solution comprising an organic stabilizer R-X and a phosphine, these steps being performed in an inert atmosphere with the exclusion of oxygen;

- a flocculent is added to cause the nanoparticles to precipitate without permanent agglomeration,

- a hydrocarbon solvent is added to redisperse or repeptize said nanoparticles.

In contrast, the claimed process involves the preparation of a composition of nanoparticles of crystalline metal oxide, wherein a liquid solution of organometallic precursor is formed, and said liquid solution is brought into contact with an oxidizing agent (pages 7-8, claim 25), for example by contact with ambient air (page 5, paragraph [0065]).

MURRAY fails to disclose or suggest such a process for the preparation of nanoparticles of crystalline metal oxide. MURRAY only discloses that metal particles can oxidize spontaneously, leading to metal oxide particles, which are not in

the crystalline state. In order to avoid this oxidation, MURRAY discloses the use of a reducing agent: super-hydride, LiBH₃) (Col. 8, lines 4-10).

More particularly, MURRAY discloses that metal particles are extremely air-sensitive and tend to agglomerate irreversibly, with degradation over time due to oxidation (Col. 1, line 51). Thus, these oxidized metal particles are not in the crystalline state, which is to say an organized network, that is a stable state. This is clearly different from the crystalline state of the metal oxide nanoparticles obtained by the process of independent claim 25, with controlled forms and dimensions and which are in dispersed form (page 2, paragraphs [0021]-[0022]).

Accordingly, nothing in MURRAY would have led the skilled artisan to achieve the process of claim 25 for preparing nanoparticles of crystalline metal oxide.

Consequently, independent claim 25 and dependent claims 26-40 are novel and non-obvious over MURRAY.

MURRAY also fails to disclose or suggest the feature of new independent claim 50. Claim 50 corresponds to claim 25, but further specifies that the contacting step occurs at temperature in a range from 0 ° to 50° C as described in the specification at page 3, paragraphs [0034]-[0035]. MURRAY does not disclose or suggest this temperature range. In fact, MURRAY describes that if a temperature is lower than 100°C, the growth of particles cannot occur (col. 7, lines 31-36). Accordingly, MURRAY could be

said to "teach away" from this temperature range of claim 50. In this regard, it is well established that a prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness. M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2145, X, D, 1. Thus, new claim 50 is also novel and non-obvious over MURRAY.

For the above reasons, the 102(b)/103(a) rejection over O'BRIEN and/or MURRAY is untenable and should be withdrawn.

103(a) rejection over O'BRIEN or MURRAY in view of
STROUSE

Claim 41 was rejected under 35 U.S.C. § 103(a) as obvious over O'BRIEN or MURRAY in view of STROUSE (US 2006/0061017) for the reasons in item 13 on pages 7-8 of the Action.

This rejection is respectfully traversed for same reasons set forth above with respect to O'BRIEN or MURRAY and for the following reasons.

Similar to O'BRIEN, STROUSE has later priority date (i.e., September 20, 2004) than Applicants' April 7, 2003 priority date. As such, both O'BRIEN and STROUSE cannot be used against as prior art against the instant application.

Moreover, independent claim 25 is novel and non-obvious over O'BRIEN or MURRAY for the reasons noted above. Thus, claim 41 (which depends thereon) is also novel and non-obvious as well.

For the above reasons, the 103(a) rejection over O'BRIEN or MURRAY in view of STROUSE is untenable and should be withdrawn.

103(a) rejection over O'BRIEN or MURRAY in view of FAU

Claim 42 was rejected under 35 U.S.C. § 103(a) as obvious over O'BRIEN or MURRAY in view of FAU (EP 0947245A1) for the reasons in item 14 on page 8 of the Action.

This rejection is respectfully traversed for same reasons set forth above with respect to O'BRIEN or MURRAY and for the following reasons.

FAU describes a method for the preparation of a metal colloid comprising a plurality of particle, each particle comprising a core of metal (Col. 7, Claim 1), wherein:

- an organometallic precursor comprising the metal is provided,
- the organometallic precursor is combined with a solvent comprising water,
- the combination of organometallic precursor and solvent is heated so that the organometallic precursor decomposes to form the metal colloid and by-products, and
- the by-products are removed.

FAU also discloses the use of tin bis(bis(dimethylamide)) as an organometallic precursor (Col. 3, paragraph [0018]).

However, FAU does not disclose or suggest a process for the preparation of nanoparticles of crystalline metal oxide nor a process wherein a liquid solution of organometallic precursor is formed, and said liquid solution is brought into contact with an oxidizing agent. As such, FAU fails to cure the deficiencies of MURRAY. Accordingly, the combination of FAU and MURRAY would not lead the skilled artisan to achieve the subject matter of claim 42.

Further, independent claim 25 is novel and non-obvious over O'BRIEN or MURRAY for the reasons noted above. Thus, claim 42 (which depends thereon) is also novel and non-obvious as well.

Thus, the 103(a) rejection over O'BRIEN or MURRAY in view of FAU is untenable and should be withdrawn.

103(a) rejection over O'BRIEN or MURRAY in view of
KORTSHAGEN

Claims 42-44 were rejected under 35 U.S.C. § 103(a) as obvious over O'BRIEN or MURRAY in view of KORTSHAGEN (US 2006/0051505) for the reasons in item 15 on page 9 of the Action.

This rejection is respectfully traversed for same reasons set forth above with respect to O'BRIEN or MURRAY and for the following reasons.

KORTSHAGEN has a later priority date (i.e., June 18, 2004) than Applicants' April 7, 2003 priority date. As such, KORTSHAGEN cannot be used against as prior art against the instant application.

Thus, the 103(a) rejection over O'BRIEN or MURRAY in view of KORTSHAGEN is untenable and should be withdrawn.

V. NOTICE REFERENCES CITED PTO-892 FORM

It is believed that the PTO-892 form contains an error. Specifically, O'BRIEN (US 2007/0140951A) was cited in the 102(b)/103(a) rejection in item 11 on page 5 of the Office Action. This reference has not been cited in a PTO-892 form. Instead, it seems another reference, HOOPER (US 2007/0140851), was listed on the PTO-892 form. Please clarify and correct this error as Applicants wish to have the correct references cited on the face of a patent issuing from this application.

VI. CONCLUSION

In view of the above, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested. If the Examiner has any proposals for expediting prosecution, please contact the undersigned at the telephone number below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Jay F. Williams, Reg. No. 48,036
209 Madison Street, Suite 500
Alexandria, VA 22314
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

JFW/jr

APPENDIX:

The Appendix includes the following item(s):

- a verified English translation of foreign priority document